

METHOD AND APPARATUS FOR CONTINUOUS FORMATION AND LIFT-OFF OF POROUS SILICON LAYERS

Abstract of the Disclosure

A method and apparatus for slicing a semiconductor substrate. In one embodiment, the invention allows repetitive etching of a surface of the semiconductor substrate with a time dependent concentration of fluorine ions and a time dependent current I , such that multiple porous layers are obtained. The porous layer is released, and the released porous layer is removed from the surface of the substrate. The surface roughness of the porous layer is maintained within an acceptable or desired level of roughness value. The invention also provides an apparatus including a container having an etching solution. The semiconductor substrate may be protected by a tube covering at least a portion of said semiconductor substrate from said etching solution. The rate of insertion of said semiconductor substrate into the container is controlled to synchronize the lift-off with the insertion of the correct thickness of the semiconductor substrate. The anodising current is provided between two electrodes during operation.